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SCHWABE, WILLIAMSON & WYATT, P.C.
PACWEST CENTER, SUITES 1600-1900
1211 SW FIFTH AVENUE
PORTLAND, OR 97204

| EXAMINER | |
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| NAJJAR, SALEH | |

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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Paper No. 31

Application Number: 09/399,065
Filing Date: September 18, 1999
Appellant(s): KENYON ET AL.

Robert Watt
(Reg. No. 45,890)
For Appellant

## EXAMINER'S ANSWER

This is in response to the appeal brief filed January 7, 2004.

## REAL PARTY IN INTEREST

A statement identifying the real party in interest is contained in the brief.

## (RELATED APPEALS AND INTERFERENCES)

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

## STATUS OF THE CLAIMS

The statement of the status of the claims contained in the brief is correct.

## STATUS OF AMENDMENT

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

## SUMMARY OF INVENTION

The summary of invention contained in the brief is correct.

## ISSUES

The appellant's statement of the issues in the brief is correct.

## GROUPING OF THE CLAIMS

The appellants' statement of the grouping of the claims in the brief is correct.

## CLAIMS APPEALED

The copy of the appealed claims contained in the appendix pages I-X is correct.

## PRIOR ART OF RECORD

U. S. Patent No. 6,345,279, published on February 25, 2002, filed on April 23, 1999 by Li et al, (hereinafter as Li).

## NEW PRIOR ART

No new prior art has been applied in this examiner's answer.

**GROUND OF REJECTION**

Claims 1-10, 12-21, and 23-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al., U.S. Patent No. 6,345,279.

Li teaches the invention as claimed including a method and apparatus for adapting multimedia content for client devices (see abstract).

As to claim 1, Li teaches a client computer system including a method of operation comprising:

determining operating characteristic value(s), by the client system, for at least one operating characteristic of the client computer system (see figs. 3-7; col. 6, lines 7-40, Li discloses that the client is characterized by its profile which includes its capabilities and its resources and that the request header for example could be used to specify the client's current capabilities and resources); and

adaptively requesting, by the client system, streaming of model data (multimedia document 370) comprising geometric data (InfoPyramid data), from a remote content providing server (701), adjusting said requesting based at least in part on the determined operating characteristic value(s) of the at least one operating characteristic of the client computer system (see figs. 1-7; col. 4, lines 33-67; col. 5, lines 30-55; col. 6, lines 7-40, Li discloses that the request header for example could be used to specify the client's current capabilities and resources and that the client system requests content data that is rendered into a template, the requested content comprise InfoPyramid data which may include reduced size images of the original version of the image requested by the client system).

As to claim 2, Li teaches a client computer system including a method of operation as in claim 1 above, wherein the at least one operating characteristic comprises one or more operating characteristics selected from a group consisting of communication bandwidth, processor power, availability of memory, availability of swap space, memory and bus speed, availability of video memory, availability of digital signal processing for audio decompression, and availability of graphics acceleration (see col. 6, lines 7-40).

As to claim 3, Li teaches a client computer system including a method of operation as in claim 1 above, wherein said determining is performed as an integral part of an installation of a multi-media content player, and said adaptively requesting streaming of model data is performed by said multi-media content player (see fig. 7; col. 12, lines 14-19, Li discloses that an adaptation process 300 can be downloaded to the client and implemented at the client for adaptively requesting and rendering multimedia content at the client).

As to claim 4, Li teaches a client computer system including a method of operation as in claim 1 above, wherein said model data comprise of data selected from a group consisting of lighting data, coloring data, texturing data, animation data, and audio data (see col. 5, lines 30-60; col. 6-7).

As to claim 5, Li teaches a client computer system including a method of operation as in claim 1 above, wherein said adaptively requesting of streaming of model data comprises adaptively requesting the remote content providing server for different versions of the model data based at least in part on the determined operating

characteristic value(s) of the at least one operating characteristic of the client computer system (see figs. 1-7; col. 6, lines 50- 65, Li discloses that different versions of data is returned based on client capabilities and resources).

As to claim 6, Li teaches a client computer system including a method of operation as in claim 1 above, wherein the method further comprises monitoring at least one performance indicator for the client computer system (see col. 6, lines 30-40, Li teaches that request headers are updated with the current client resources and capabilities).

As to claim 7, Li teaches a client computer system including a method of operation as in claim 6 above, wherein said at least one performance indicator comprises one or more selected from a group consisting of bandwidth utilization, CPU utilization, memory utilization, memory swapping, cache hit rate, and audio frames drop rate (see col. 6, lines 10-30).

As to claim 8, Li teaches a client computer system including a method of operation as in claim 6 above, wherein said adaptively requesting of streaming of model data comprises switching to requesting the remote content providing server for higher precision versions of the model data, responsive to indicator values of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a higher precision versions of the multimedia object is returned based on the current client characteristics).

As to claim 9, Li teaches a client computer system including a method of operation as in claim 6 above, wherein said adaptively requesting of streaming of model data comprises switching to requesting the remote content providing server for lower

precision version of the model data, responsive to indicator values of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a lower precision version of the multimedia object is returned based on the current client characteristics).

As to claim 10, Li teaches a client computer system including a method of operation as in claim 1 above, wherein the method further comprises automatically synchronizing rendering of the received model data in accordance with the timeliness of the receipt of the model data (see figs. 5-6; col. 6, lines 24-26; col. 7, lines 60-65; col. 11, lines 56-67, Li discloses that content item requested are given priority values for the different versions and are selected for rendering to the client device based partly on the wait time limit of the client).

As to claim 12, Li teaches a client computer system comprising:

a processor to execute programming instructions (see fig. 8; col. 12, lines 35-40); and

a storage medium, coupled to the processor, having stored therein a first and a second plurality of programming instructions to be executed by the processor, the first plurality of programming instructions, when executed, determine operating characteristic value(s), by the client computer system, for at least one operating characteristic of the client computer system, and the second plurality of programming instructions, when executed, adaptively request, by the client computer system, streaming of model data, comprising geometry data, from a remote content providing server, adjusting said requesting based at least in part on the determined operating characteristic value(s) of the at least one operating characteristic of the client computer system (see figs. 1-7; col.

4, lines 33-67; col. 5, lines 30-55; col. 6, lines 7-40, Li discloses that the request header for example could be used to specify the client's current capabilities and resources and that the client system requests content data that is rendered into a template, the requested content comprise InfoPyramid data which may include reduced size images of the original version of the image requested by the client system).

As to claim 13, Li teaches the client computer system of claim 12, wherein the at least one operating characteristic comprises one or more operating characteristics selected from a group consisting of communication bandwidth, processor power, availability of memory, availability of swap space, memory and bus speed, availability of video memory, availability of digital signal processing for audio decompression, and availability of graphics acceleration (see col. 6, lines 7-40).

As to claim 14, Li teaches the client computer system of claim 12, wherein the first and second plurality of programming instructions implement a multi-media content player, and said first plurality of programming instructions are executed when the first and second plurality of programming instructions are installed on said client computer system, and when the second plurality of programming instructions are executed to download a multi-media title (see fig. 7; col. 12, lines 14-19, Li discloses that an adaptation process 300 can be downloaded to the client and implemented at the client for adaptively requesting and rendering multimedia content at the client).

As to claim 15, Li teaches the client computer system of claim 12, wherein said model data comprise of data selected from a group consisting of lighting data, coloring data, texturing data, animation data, and audio data (see col. 5, lines 30-60; col. 6-7).

As to claim 16, Li teaches the client computer system of claim 12, wherein when executed, said second plurality of programming instructions adaptively request the remote content providing server for different versions of the model data based at least in part on the determined operating characteristic value(s) of the at least one operating characteristic of the client computer system (see figs. 1-7; col. 6, lines 50- 65, Li discloses that different versions of data is returned based on the client capabilities and resources).

As to claim 17, Li teaches the client computer system of claim 12, wherein the second plurality of programming instructions further monitor at least one performance indicator for the client computer system (see col. 6, lines 30-40, Li teaches that request headers are updated with the current client resources and capabilities).

As to claim 18, Li teaches the client computer system of claim 17, wherein said at least one performance indicator comprises one or more selected from a group consisting of bandwidth utilization, CPU utilization, memory utilization, memory swapping, cache hit rate, and audio frames drop rate (see col. 6, lines 10-30).

As to claim 19, Li teaches the client computer system of claim 17, wherein when executed, said second plurality of programming instructions switch to requesting the remote content providing server for higher precision versions of the model data, responsive to indicator value(s) of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a higher versions of the multimedia object is returned based on the current client characteristics).

As to claim 20, Li teaches the client computer system of claim 17, wherein when executed, said second plurality of programming instructions switch to requesting the remote content providing server for lower precision versions of the model data, responsive to indicator value(s) of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a lower versions of the multimedia object is returned based on the current client characteristics).

As to claim 21, Li teaches the client computer system of claim 12, wherein when executed, said second plurality of programming instructions further automatically synchronizing rendering of the received model data based at least: in part on the timeliness of the receipt of the model data (see figs. 5-6; col. 6, lines 24-26; col. 7, lines 60-65; col. 11, lines 56-67, Li discloses that content item requested are given priority values for the different versions and are selected for rendering to the client device based partly on the wait time limit of the client).

As to claim 23, Li teaches a computer server including a method of operation comprising:

storing multiple versions of model data tailored for different operating environments differentiated in accordance with values of at least one operating characteristic of a remote requesting client computer system (see figs. 1-7; col. 4, lines 66- col. 5, lines 5; col. 12, lines 8-14, Li discloses that a specific version of the multimedia item can be referred to by one of the cells of an InfoPyramid is retrieved based on the current operating characteristics of the client);

accepting requests from the remote requesting client system for said model data that adaptively includes version selection designations, with the inclusion being adjusted, by the remote requesting client computer system, based at least in part on the operating characteristics of the remote requesting client computer system (see figs. 1-7; col. 4, lines 33-67; col. 5, lines 30-55; col. 6, lines 7-40, Li discloses that the request header for example could be used to specify the client's current capabilities and resources and that the client system requests content data that is rendered into a template, the requested content comprise InfoPyramid data which may include reduced size images of the original version of the image requested by the client system); and

streaming the requested versions of the model data to the remote requesting client computer system, responsive to the accepted requests (see col. 4-6).

As to claim 24, Li teaches the method of claim 23, wherein the at least one operating characteristic comprises one or more operating characteristics selected from a group consisting of communication bandwidth, processor, power, availability of memory, availability of swap space, memory and bus speed, availability of video memory, availability of digital signal processing for audio decompression, and availability of graphics acceleration on the remote requesting client computer system (see col. 6, lines 7-40).

As to claim 25, Li teaches the method of claim 23, wherein said model data comprise of data selected from a group consisting of lighting data, coloring data, texturing data, animation data, and audio data (see col. 5, lines 30-60; col. 6-7).

As to claim 26, Li teaches a computer server comprising:

a processor to execute programming instructions (see fig. 8; col. 12, lines 35-40); and

a storage medium, coupled to the processor, having stored therein multiple versions of model data, comprising geometry data, tailored for different operating environments differentiated in accordance with value(s) of at least one operating characteristic of a remote requesting client computer system, and a plurality of programming instructions, when executed, accept requests from the remote requesting client computer system for said model data that adaptively includes, by the remote requesting client computer system, version selection designations, with the inclusion being adjusted based at least in part on said operating characteristic of the remote requesting client computer system, and stream the requested versions of the model data to the remote requesting client computer system, responsive to the accepted requests (see figs. 1-7; col. 3, lines 50-67; col. 4, lines 33-67; col. 5, lines 30-55; col. 6, lines 7-40; Li discloses programming instructions that execute to provide a server that accepts requests sent by the client that is characterized by its profile the request includes current clients' capabilities and resources and that the client system requests content data that is rendered into a template, the requested content comprise InfoPyramid data which may include reduced size images of the original version of the image requested by the client system).

As to claim 27, Li teaches the computer server of claim 26, wherein the at least one operating characteristic comprises one or more operating characteristics selected from a group consisting of communication bandwidth, processor power, availability of

memory, availability of swap space, memory and bus speed, availability of video memory, availability of digital signal processing for audio decompression, and availability of graphics acceleration on the remote requesting client computer system (see col. 6, lines 7-40).

As to claim 28, Li teaches the computer server of claim 26, wherein said model data comprise of data selected from a group consisting of lighting data, coloring data, texturing data, animation data, and audio data (see col. 5, lines 30-60; col. 6-7).

As to claim 29, Li teaches a method for streaming multi-media content comprising:

storing by a multi-media content providing server, multiple versions of model data, comprising geometry data (InfoPyramid data) , tailored for different operating environments differentiated in accordance with value(s) of at least one operating characteristic of a remote requesting client computer system requests (see figs. 1-7; col. 3, lines 50-67; col. 4, lines 33-67; col. 5, lines 30-55; col. 6, lines 7-40; Li discloses programming instructions that execute to provide a server that accepts requests sent by the client that is characterized by its profile the request includes current clients' capabilities and resources and that the client system requests content data that is rendered into a template, the requested content comprise InfoPyramid data which may include reduced size images of the original version of the image requested by the client system);

determining by a multi-media content player of the remote requesting client

computer system, operating characteristic value(s) for at least one operating characteristic of the remote requesting client computer system (see figs. 3-7; col. 6, lines 7-40, Li discloses that the client is characterized by its profile which includes its capabilities and its resources and that the request header for example could be used to specify the client's current capabilities and resources);

adaptively requesting by the multi-media content player of the remote requesting client computer system, different versions of model data from the multi media content providing server, adjusting said requesting based at least in part on the determined operating characteristic value(s) of the at least one operating characteristic of the remote requesting client computer system (see fig. 7; col. 12, lines 14-19, Li discloses that an adaptation process 300 can be downloaded to the client and implemented at the client for adaptively requesting and rendering multimedia content at the client); and streaming by the multi-media content providing server, the requested versions of the model data, responsive to the requests of the multi-media content player (see figs. 1-7; col. 6, lines 50- 65, Li discloses that different versions of data is returned based on client capabilities and resources).

As to claim 30, Li teaches the method of claim 29, wherein said determining is performed as an integral part of an installation of a multi-media content player, and re-performed by the multi-media content player at download time of a multi-media title (see fig. 7; col. 12, lines 14-19, Li discloses that an adaptation process 300 can be downloaded to the client and implemented at the client for adaptively requesting and rendering multimedia content at the client).

As to claim 31, Li teaches the method of claim 29, wherein the method further comprises monitoring by the multi-media content player, at least one performance indicator for the remote requesting client computer system (see fig. 2; col. 6-7, Li discloses that different versions of the multimedia object is returned based on the current client characteristics).

As to claim 32, Li teaches the method of claim 31, wherein said adaptively requesting by the multi-media content player comprises switching to requesting the multi-media content providing server for higher precision versions of the model data, responsive to indicator value(s) of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a higher precision versions of the multimedia object is returned based on the current client characteristics).

As to claim 33, Li teaches the method of claim 31, wherein by the multi-media content player comprises switching to requesting the multi-media content providing server for lower precision versions of the model data, responsive to indicator value(s) of the monitored at least one performance indicator (see fig. 2; col. 6-7, Li discloses that a lower precision versions of the multimedia object is returned based on the current client characteristics).

As to claim 34, Li teaches the method of claim 29, wherein the method further comprises automatically synchronizing by the multi-media player, rendering of the received model data based at least in part on the timeliness of the receipt of the model data (see figs. 5-6; col. 6, lines 24-26; col. 7, lines 60-65; col. 11, lines 56-67, Li discloses that content item requested are given priority values for the different versions

and are selected for rendering to the client device based partly on the wait time limit of the client).

As to claim 35, Li teaches a client computer system including a method of operation as in claim 1 above further comprising determining a single composite operating characteristic value based on the determined operating characteristic values of the at least one operating characteristic (see col. 6, Li teaches that at least one composite operating characteristic of the client is determined).

As to claim 36, Li teaches a client computer system including a method of operation as in claim 35 above wherein said determining comprises computing a weighted index that weighs relative importance of said at least one operating characteristic (see col. 8, line 10, Li discloses computing the weighted index Ri of the client resources).

As to claim 37, Li teaches the method of claim 12, wherein said determining of operating characteristic value(s) further comprises determining a single composite operating characteristic value based on the determined operating characteristic values of the at least one operating characteristic (see col. 6; col. 8, line 10, Li discloses determining a composite characteristic of the client based on operating characteristic values of the client).

As to claim 38, Li teaches the method of claim 37, wherein said determining of said single composite operating characteristic value comprises computing a weighted index that weighs relative importance of said at least one operating characteristic (see col. 8, line 10, Li discloses computing the weighted index Ri of the client resources).

Claims 11, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al..

Li teaches the invention substantially as claimed including a method and apparatus for adapting multimedia content for client devices (see abstract).

As to claim 11, Li teaches a client computer system including a method of operation as in claim 10 above.

Li fails teach the limitation wherein said automatic synchronization of rendering of the received model data comprises dropping audio data in proportion to the amount of the time the audio data arrived late.

Official Notice is taken that the concept and advantages of dropping audio data frames that arrived too late with respect to its sequence is old and well known in the data communication art.

It would have been obvious to one of ordinary skill in the art to apply the concept of dropping audio data frames in Li to allow efficient synchronization of downloaded multimedia data.

Claim 22 does not teach or define any new limitations above claim 11 and therefore is rejected for similar reasons.

**Response to Arguments**

The examiner summarizes the various points raised by the appellant and addresses replies individually.

As per appellants' arguments filed on January 7, 2004, the appellants argued in substance that Li does not teach or suggest adaptively requesting model data comprising geometric data (see page 6 of the Brief).

**In reply,** Li discloses that the client system requests content data (model data) that is rendered into a template, the requested content comprises InfoPyramid data (geometric data), this disclosure in Li reads on the broad claimed language of requesting **model data comprising geometric data** (see figs. 1-2; col. 4, lines 5-40, lines 50-67; col. 5, lines 30-55).

The appellants further argue that in Li, static indicators of the client device are used to determine the documents type to render to the client device and thus Li does not teach **adaptively requesting responsive to indicator values of the monitored at least one performance indicator** (see page 7 of the Brief).

**In reply**, Li discloses that the request header of the client could be used to indicate the clients current resources and capabilities for each requested content, the fact that the client's resources and capabilities are specified in each different request header reads on the claimed language of **adaptively requesting responsive to indicator values of the monitored at least one performance indicator** (see figs. 3-7; col. 6, lines 7-40).

The appellants also challenged the "Official Notice" taken by the examiner where the dropping audio data frames that arrive too late with respect to its sequence is old and well known in the art (see page 8 of the Brief).

**In reply**, although the appellants did not timely challenge the "Official Notice" taken by the examiner. The examiner is providing a U.S. Patent No. 5,918,002 filed by Klemets et al. on March 14, 1997, and issued on June 29, 1999. The Klemets reference discloses **dropping audio data frames that arrived too late with respect to its sequence** (see col. 2, lines 49-67; col. 11, lines 55-65, Klemets discloses that when the client computer detects that a data packet within a sequence of packets has not arrived by an expected time of arrival the data packet is discarded).

For the above reasons, it is believed that the rejections should be sustained.

April 2, 2004

SALEH NAJJAR
PRIMARY EXAMINER

Conferees

ROBERT B. HARRELL
PRIMARY EXAMINER

ZARNI MAUNG
PRIMARY EXAMINER

SCHWABE, WILLIAMSON & WYATT, P.C.
Pacwest Center, Suites 16900-1900
1211 SW Fifth Avenue
Portland Oregon 97204